The National Center for Academic Transformation

Experts in improving learning and reducing cost in higher education.

The Learning MarketSpace, July 2008

A quarterly electronic newsletter of the National Center for Academic Transformation highlighting ongoing examples of redesigned learning environments using technology and examining issues related to their development and implementation.

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1. What's New

Featuring updates and announcements from the Center.

NCAT Adds Sixth Course Redesign Model

NCAT continues to be open to new course redesign models that emerge from our ongoing course redesign initiatives around the country. We have identified a new model, which we call the Linked Workshop Model, created by Austin Peay State University in its redesign of two developmental math courses, Elementary Algebra and Intermediate Algebra. This new model builds on the Structured Learning Assistance (SLA) model developed by Ferris State University in Michigan. Like NCAT's other five course redesign models, the Linked Workshop Model embodies NCAT's emphasis on improving the quality of student learning while reducing instructional costs through the application of information technology.

The Linked Workshop model provides remedial/developmental instruction by linking workshops that offer students just-in-time supplemental academic support to core college-level courses.

The key characteristics of this model are:

- Retains the basic structure of the college-level course, particularly the number of class meetings.
- Replaces the remedial/developmental course with just-in-time workshops.
- Workshops are designed to remove deficiencies in core course competencies.
- Workshops consist of computer-based instruction, small-group activities and test reviews to provide additional instruction on key concepts.
- Students are individually assigned software modules based on results of diagnostic assessments.
- Workshops are facilitated by students who have previously excelled in the core course and are trained and supervised by core course faculty.
- Workshop activities are just-in-time—i.e., designed so that students use the concepts during the next core course class session, which in turn helps them see the value of the workshops and motivates them to do the workshop activities.

To read more about Austin Peay's pioneering course redesign, see http://www.thencat.org/States/TN/Abstracts/APSU%20Algebra_Abstract.htm or contact Martin Golson at golsonm@apsu.edu.

Mastery Quizzing: It's Not Just for Psychology Redesigns

Many faculty members are interested in using mastery quizzing in their courses, whether based on commercially available test banks or locally developed items managed by course management systems. Project teams working with NCAT in multiple disciplines have repeatedly shown that using frequent quizzes can increase student engagement and result in greater learning. But not all approaches to quizzing are created equal. Some faculty have tried using quizzing but failed to see positive changes in student behavior. They have concluded that quizzing itself rather than the way they used quizzing was at fault.

As part of NCAT's Roadmap to Redesign program, conducted from 2003 – 2006, several project leaders from the Pew-funded Program in Course Redesign who had conducted course redesigns in introductory psychology developed a description of the most effective ways to use mastery quizzing to increase student engagement in large-enrollment, introductory courses.

We have found over time that many more disciplines other than psychology have used quizzing successfully. The following provide a taste of what has become a pervasive method for increasing student engagement with the course content. At the **University of New Mexico**, the **University of Southern Maine** and **Eastern Washington University**, quizzing has been used very successfully in psychology. In mathematics courses at **Louisiana State University**, the **University of Alabama,** the **University of Mississippi** and the **University of Idaho**, quizzes have again been part of successful redesigns that significantly increased learning. Other disciplines have also incorporated this technique; for example, mastery quizzing is part of the redesign of a variety of science courses at **Arizona State University,** the **State University of New York at Stony Brook,** the **University of Arizona** and the **University of Massachusetts Amherst**. In addition, mastery quizzing is part of such humanities courses as Understanding the Performing and Visual Arts at **Florida Gulf Coast University** and European and American History at **SUNY Potsdam**. **Boise State University** is using mastery quizzing in introductory accounting, and the **University of Texas at Brownsville/Southmost College** plans to use quizzing in its redesign of developmental reading.

In light of the broad use of quizzing in many disciplines beyond psychology, we recently asked a number of NCAT's Redesign Scholars to review the original "Quizzing Memo" developed by our psychology colleagues. The view was unanimous: this good advice applies to all disciplines. If you have tried quizzing without good results, you might want to consider the Scholars' specific advice and make some changes in your approach. To learn more about how quizzing can be successfully used in your courses, see http://www.thencat.org/R2R/AcadPrac/CM/PsyQuizzing.html.

Carol Twigg Updates the Arizona Board of Regents

On June 19, 2008, Carol Twigg spoke to the Arizona Board of Regents (ABOR) in Flagstaff, AZ. She reported good progress in the ABOR Learner Centered Education Course Redesign Initiative and shared with the board members the results thus far based on the workshop held the previous day described below. The 13 projects that are part of the ABOR initiative impact more than 25,000 students with an anticipated average savings of $97 per student, producing total annual savings for the ABOR institutions that exceed $1.5 million. The presidents of **Arizona State University**, **Northern Arizona University** and the **University of Arizona** all spoke in favor of the initiative, citing the positive impact that it is having on their campuses. The initiative includes redesign projects in business, humanities, math, the natural sciences and the social sciences, providing examples across disciplines for others in the system.

To learn more, see http://www.thencat.org/States/ABOR.htm.

The Northwest Academic Forum Focuses on Course Redesign

On March 5, 2008, Carolyn Jarmon presented an overview of NCAT's state and system-based programs to the Northwest Academic Forum (NWAF) in Boise, ID. The NWAF addresses regional higher education issues and engages in cooperative resource sharing. Its members are public doctoral and master's level institutions and university system offices in ten states, including Alaska, Hawaii, Idaho, Montana, Nevada, North Dakota,

Oregon, South Dakota, Washington, and Wyoming. Carolyn provided information about the redesign programs to date, including preliminary results.

Joining Carolyn, were two leaders of highly successful redesign projects in the Northwest region. Bill Williams, an NCAT Redesign Scholar, described the use of peer mentors and the results to date of the redesign of Introductory Psychology at **Eastern Washington University** (EWU.) This project was part of NCAT's Roadmap to Redesign (R2R) program completed in 2006. Ben Hambelton from **Boise State University** (BSU) provided an overview of their redesign of the introductory accounting sequence conducted as part of Round I of NCAT's Colleagues Committed to Redesign (C2R) program. Ben described the pedagogical techniques and cost reduction strategies that showed great promise in the pilot and will be part of full implementation.

To learn more about the EWU project, see http://www.thencat.org/R2R/Abstracts/EWU_Home.htm or contact Bill Williams at bwilliams@mail.ewu.edu. To learn more about the BSU project, see http://www.thencat.org/RedesignAlliance/C2R/R1/Abstracts/BSU_Abstract.htm or contact Ben Hambelton at bhambelton@boisestate.edu.

2. CENTER CHRONICLES

Featuring initiatives to scale course redesign through state- and system-wide redesign programs.

Mississippi Institutions of Higher Learning Announce Redesign Grant Awards

Final proposals for the Mississippi Institutions of Higher Learning (IHL) Course Redesign Initiative were submitted on June 15, 2008. This initiative will achieve improvements in learning outcomes as well as reductions in instructional costs by redesigning large-enrollment, multi-section courses using technology-supported active learning strategies. Prior to submitting proposals, course teams participated in a series of events including two one-day workshops and consultations with NCAT staff and the Redesign Scholars. A total of twelve grants ranging from $50,000 to $100,000 were awarded. During summer and fall 2008, the teams will complete preparations for implementing their redesign pilots during spring 2009.

The successful institutions and the courses they plan to redesign are: **Alcorn State University**: College Algebra; **Jackson State University**: Intermediate Algebra and College Algebra; **Mississippi State University**: Biology (Plants and Humans and Animal Biology), Survey of Chemistry I and Statics; **University of Mississippi**: Business Calculus; and, **University of Southern Mississippi:** First-Year Spanish, General Psychology, Intermediate Algebra, Introduction to Computing, Nutrition and Technical Writing. We congratulate all twelve of these teams!

Abstracts of these projects will be available on the NCAT web site in late summer. To learn more about the IHL initiative, see http://www.thencat.org/States/MS.htm or contact Lynn House at lhouse@ihl.state.ms.us or Alfred Rankins at arankins@mississippi.edu.

SUNY Redesign Projects Selected

After a year of planning and preparation, the 64-campus State University of New York (SUNY) has selected ten redesign projects to be part of the SUNY Course Redesign Initiative. SUNY seeks to achieve improvements in learning outcomes as well as reductions in instructional costs by redesigning large-enrollment, multi-section courses using technology-supported active learning strategies. Teams submitted their final proposals on April 8, 2008, and SUNY awarded ten grants of ~$40,000 each to the institutions listed below. During summer and fall 2008, the teams will complete preparations for implementing their redesign pilots during spring 2009.

The successful institutions and the courses they intend to redesign are: **Buffalo State College**: The Economic System, **Erie Community College**: Developmental English (Improvement of College Writing I and II), **Niagara County Community College**: Introduction to Statistics, **SUNY Canton:** Biology (Introduction to Biology and Introduction to Human Biology), **SUNY Canton:** Basic Communication, **SUNY Fredonia**: First-Year Spanish, **SUNY College at Old Westbury**: College Algebra, **SUNY Oswego**: College Algebra, **SUNY Potsdam**: History (European History and American History), and **Stony Brook University**: Physics for Life Sciences. We congratulate all ten of these teams!

Abstracts of these projects are available on the NCAT web site at http://www.thencat.org/States/NY/SUNY%20Project%20Descriptions.htm.

To learn more about the SUNY initiative, see http://www.theNCAT.org/States/SUNY.htm or contact Patricia Pietropaolo, at Patricia.Pietropaolo@SUNY.edu.

Arizona Board of Regents Teams Gather in Phoenix to Discuss Pilots

On June 18, 2008, redesign teams from the Arizona Board of Regents (ABOR) Learner-Centered Education Course Redesign Initiative met in Phoenix, AZ, to share the results from their spring 2008 pilots. Teams discussed issues they had encountered during the pilots and plans they have made in preparation for the full implementation of their course redesigns in fall 2008. Some of the challenges which emerged included the need for greater faculty and student training, how to intervene with students who do not get engaged as needed, space and other facilities issues and the effective integration of clickers into large lecture sessions.

Attending the gathering were teams from the following institutions with the course they are redesigning: **Arizona State University (ASU)**: Accounting, College Algebra, Computing and Information Literacy, General Chemistry, Organizational Management and Leadership, Public Speaking, and Women in Society; **Northern**

Arizona University (NAU): Introductory Biology and Introduction to Psychology; and, **University of Arizona (UA)**: Introductory Biology and General Chemistry. While unable to attend the workshop, teams from ASU's Introduction to Geology and UA's A Geological Perspective provided written progress reports and assessment results from their pilot implementations. Brief summaries of the progress reports with contact information are presented below.

ASU's redesign of **Computing and Information Literacy** is moving along extremely well. The spring 2008 pilot used a combination of models: 1) a Replacement Model with one optional class meeting per week coupled with an interactive lab session, and 2) a Fully Online Model. Although optional lectures were available as planned, only a small percentage of the students actually attended. As the team anticipated, most learning occurred in the interactive labs and through the online activities. Student evaluations were quite positive about the new model in contrast to what had been highly negative opinions about the traditional course. The pilot redesign included more challenging course content than the traditional, yet students earned more A's (68%) in the redesign than in the traditional (38%). (The same instructor taught both versions of the course using the same grading criteria.) This redesign will move to full implementation in fall 2008. Although students will enroll for either the online or hybrid section, all students will effectively be in one large section. Students may either come to the optional lectures and face-to-face labs, or they may do all of the work online. To learn more, contact Toni Farley at toni@asu.edu.

ASU's redesign of **General Chemistry**, using the Supplemental Model, focuses on redesigning recitation sessions and online homework which are integrated with all of the course content and are mandatory. Because lectures are not required, the team decided that developing consistency in those aspects of the course which are mandatory would lead to greater overall student success. The overall mean scores on hourly exams and the final exam were higher in the spring 2008 redesign pilot than in the spring 2007 traditional sections (increasing from 55% to 64% on the final exam.) Performance on eleven common questions on the final exams that covered topics specifically expected to be covered in the recitations was higher in the redesign at the .056 significance level. The pilot provided good information to the team so that they can revise the recitation activities to have greater student impact. One change from the original plan was to use adjunct faculty rather than TAs to lead the recitations since the adjuncts provided greater personnel consistency and were easier to train. In addition, adjuncts cost less than TAs. To learn more, contact Janet Bond-Robinson at bond-robinson@asu.edu.

ASU's redesign of **Introduction to Geology**, using the Replacement Model, is on track. The team developed several dozen movies and interactive exercises and quizzes which were part of the pilots conducted in spring 2008 and summer 2008. In the spring pilot, quizzes were only offered online; in the summer pilot, some quizzes were given in class, providing greater interaction for students. There was no significant difference in scores on five hourly exams in the traditional and redesigned sections. Thus, reducing class time did not affect students' overall performance on in-class exams. The results of the pilots, while very encouraging, indicated areas of the online content and delivery that can be improved, and some adjustments in the way the online activities are structured will be made. The redesign will be fully deployed to all four sections of 220 students each offered in fall 2008. To learn more, contact Julia Johnson at Julia.Johnson@asu.edu.

ASU's redesign of **Organizational Management and Leadership**, using the Replacement Model, is going very well. The team has increased consistency in content and assessment and developed online modules which students use to prepare for the one face-to-face class meeting each week. During spring 2008, the students in the pilot sections showed significantly higher average scores (80%) on 22 common questions on the final exam than students in the traditional course (67.4%.) Students also appeared to be more willing to engage in in-class discussions about material they had already discussed online with other students, and class attendance was higher in the redesigned section. Full implementation of the redesign in all sections will occur in fall 2008. To learn more, contact Roger Hutt at roger.hutt@asu.edu.

ASU's redesign of **Public Speaking,** using the Supplemental Model, allows an increase in course enrollment without requiring additional resources from the department or diminishing the quality of instruction. A key component of the redesign involves using undergraduate assistants to staff smaller lab sections, with supervision and guidance from a faculty member. The results of the spring 2008 pilot were very encouraging. The students in the redesigned course showed similar success to those in the traditional sections. The quality of the course was not compromised; the benefits of professor-student interaction remained intact; students increased their comfort and confidence in public speaking; and fewer instructional resources were used. Undergraduate training worked well, and several of the same undergraduates will be part of next year's redesign, providing some continuity. The redesign will be fully implemented in fall 2008 with 600 students, tripling the number that would have been accommodated under the old model. To learn more, contact Meg McConnaughy at Meg.McConnaughy@asu.edu.

ASU's redesign of **Women in Society** is going very well. The redesign uses the Replacement Model for both the lower division and the upper division sections of the course and involves having students work online in small groups and meet once a week in large sections. The spring 2008 pilot showed that students in the redesigned sections scored slightly better than students in the traditional sections on both the midterm and the final exams. The difference was significant in all redesigned sections for the midterm exam, but significant for only one of the two redesigned sections for the final exam. Students seemed more engaged, better prepared and better connected to the course content in the redesign. The team encountered some challenges related to using the technology and managing the TAs and UGAs. Increased training will assist with the latter problem, and greater tracking capability in Blackboard will be used to help faculty identify students who are not engaging early in the online aspects of the redesign. The team also plans to add an undergraduate learning assistant to monitor the online discussion. Full implementation will occur in fall 2008 with all students registered at both the introductory and advanced levels. To learn more, contact Mary Margaret Fonow at MaryMargaret.Fonow@asu.edu.

NAU's redesign of **Introduction to Psychology** is on track. In class, a large, team-taught section incorporated a student-response system (clickers) to encourage active learning, provide students with individualized assistance and support ongoing assessment of student attendance and participation. Outside of the classroom, required web activities were employed to complement course lectures, using computer-based assessment to increase the amount and frequency of feedback to students and time on task outside the classroom. The course web site has been established, including four web assignments which capitalize on existing web resources, such as the online Harvard Brain Atlas, to increase and expand student engagement outside of class meetings. Students in the spring 2008 pilot section scored slightly lower on the post-test scores than students in the fall 2005 comparison section. Faculty are examining student feedback on the course activities and planning modifications as they move forward to full implementation in fall 2008 with ~1100 students. To learn more, contact Michelle Miller at michelle.miller@nau.edu.

Introductory Biology at UA is being redesigned using the Supplemental Model. Pre-class tutorials and online discussion activities were developed as part of the spring 2008 pilot. A new textbook was adopted along with accompanying interactive software. Activities using clickers in class were also developed. Class attendance increased in the redesigned sections (75% vs. ~45% for traditional sections.) Students were positive about the usefulness of clicker exercises (81%), online quizzes (70%), instructor-created podcasts (75%) and in-class problem-solving (61%). Students continued to rate this course as extremely difficult or more difficult than average (~90%) The redesign allowed time for the instructor to cover two additional topics than was possible in the traditional course. Results from the pilot using data from ten common final exam questions and the same instructor showed no significant difference. Anecdotally, the instructor felt that the redesign cohort may have been less prepared than the traditional cohort on entering the course. To learn more, contact Kathleen Dixon at dixonk@email.arizona.edu.

The UA team redesigning **General Chemistry** is making good progress. The plan, using the Supplemental Model, involved combining the lecture and lab courses into one, leading to better coordination, more effective discussions and more efficient use of instructor and TA time. The redesign includes collaborative small group work, guided inquiry activities and experiments, and whole class interactions. The final exam results in the pilot showed no significant difference between the traditional and the redesigned sections, although there were more A's and B's in the redesigned sections and fewer C's. The team identified several challenges. TAs play a key role in the redesign, and more training is needed to be sure they are prepared. One team faculty member will teach a section of the lab to better understand the challenges that TAs face and to help develop training materials. The plan for full implementation is on track, and by spring 2009 both courses in the sequence will be fully redesigned. To learn more, contact Vicente Talanquer at vicente@email.arizona.edu.

Using the Replacement Model, the UA redesign of **A Geological Perspective** is making good progress. Lectures have been replaced by active-learning group activities within each class period. Optional weekly study sessions have been replaced by mandatory breakout sessions run by graduate teaching assistants (GTAs) and undergraduate preceptors where students work on assignments designed to reinforce concepts from the lecture sessions and require students to apply what they have learned. The team experienced a number of problems with the preceptors in the pilot. Several were not proactive enough in the discussion sessions, and some did not understand the material as well as expected. The weekly, one-hour team meetings were often not enough to give them the confidence they needed to run the breakout sessions without the help of a GTA. For full implementation, preceptors have been selected more discriminatingly and will be given a much more detailed outline of requirements. Preceptors will attend a training run by the University Teaching Center to teach them techniques to use in the classroom and help them deal with situations they encountered during the pilot semester (such as lack of student motivation and cheating on assignments.) For full implementation, the team will increase the number of GTAs. The team is still in the process of evaluating the pilot student outcomes to determine the impact of the redesign on general geology knowledge and critical thinking skills. To learn more, contact Jessica Kapp at jkapp@email.arizona.edu.

Three of the ABOR redesign projects (ASU Accounting, ASU College Algebra and NAU Biology) experienced various kinds of difficulties largely having to do with unexpected personnel changes during their pilot implementations and are re-assessing their original plans in order to adapt to new circumstances.

To read abstracts of each redesign project or to learn more about the ABOR initiative, see http://www.thencat.org/States/ABOR.htm or contact Maryn Boess at maryn.boess@azregents.edu.

University System of Maryland Post-Pilot Workshop Held in May

On May 31, 2008, the redesign teams participating in the **University System of Maryland** Course Redesign Initiative gathered in Baltimore, MD, to report the outcomes of their pilot semester. The teams are spending the summer preparing for full implementation in fall 2008 and refining their plans to increase their overall success. Brief progress summaries for those projects that have submitted pilot assessment reports with contact information are presented below.

Frostburg State University is redesigning General Psychology, using the Replacement Model, by enlarging the section size from 50 to 150 students and meeting face-to-face only once each week. During the spring 2008 pilot, a common final exam was developed by a psychology faculty member who was not teaching any of the sections, and none of the faculty teaching either the traditional or redesigned sections saw the exam before administering it to the students. The mean score on the exam was 75% in the redesigned sections and 68% in the traditional sections. On a subset of factually-based questions, students in the redesigned sections surpassed those in the traditional sections by nearly 10%. On conceptually-based questions, students in the redesign sections outscored the students in the traditional sections 71% to 66%. The final exam also included an extra credit essay question, scored with a common rubric. Students in the redesigned sections scored an average of 2.845; students in the traditional sections scored an average of 1.092. Using undergraduate learning

assistants (ULAs) has been key to the success of the redesign. Following the pilot, two of the ULAs earned prestigious summer positions; one received a graduate assistantship based on the ULA experience; and the ULA program itself was nominated for a campus-wide leadership award. The team experienced some technology issues that need to be resolved, and they also suspect that there were too many activities early in the redesigned course when students were just getting started. Full implementation of the redesign will occur in fall 2008 in all sections. To learn more, contact Megan Bradley at MBradley@frostburg.edu.

The redesign of Introduction to Psychology at the **University of Maryland, Baltimore County** (UMBC) is going well. Using the Replacement Model, the redesign will significantly alter both lecture and the lab activities and structure. Both are being redesigned to include greater active learning experiences, more small-group activities and more engagement with the content. UMBC pilot tested the redesign with one traditional section of 74 students and two redesigned sections totaling 139 students. A comparison of mean scores on four hourly exams in the traditional and redesign sections showed no significant differences. An external evaluator interviewed both students and faculty teaching the redesigned sections, providing qualitative feedback for the team to consider as they revise their plans in preparation for full implementation in fall 2008. Both students and faculty identified some technology issues, specifically the use of clickers, and the team is working to resolve these various technology challenges. Students also noted some disconnects between the labs and the lecture sessions. The team is working to make the active learning experiences more integrated with one another to be sure they contribute to the students' overall learning experiences. To learn more, contact Eileen O'Brien at eobrien@umbc.edu.

The redesign of Context of Health Care Delivery at **University of Maryland School of Nursing, Baltimore** is on track. The redesign plan includes organizing the course content into nine online modules and dedicating class time to small-group projects. The team compared student learning outcomes in the pilot using common exams. Students in the redesigned sections consistently earned more A's (58%) than students in the traditional sections (17%). Final grades in the redesigned section were also significantly higher than in the traditional sections. These early results are very encouraging, and the project will move to full implementation in fall 2008. To learn more, contact Carol O'Neil at ONeil@son.umaryland.edu.

To learn more about the USM initiative, see http://www.thencat.org/States/USMaryland.htm or contact Don Spicer at dspicer@usmd.edu or Nancy Shapiro at nshapiro@usmd.edu.

Tennessee Board of Regents Redesign Projects Report on First Pilots

On June 5, 2008, the six teams redesigning courses as part of the Tennessee Board of Regents (TBR) Course Redesign Initiative met in Nashville, TN, to report on the first of three pilot implementations. With support from the Fund for the Improvement of Postsecondary Education (FIPSE), the TBR initiative focuses on the redesign of developmental math and English curricula using technology-supported active-learning strategies. Each of the redesign plans is available at http://www.thencat.org/States/TN/TN%20Project%20Descriptions.htm. A summary of their reports is provided below.

Austin Peay State University (APSU) completed its first pilot during spring 2008. APSU merged two developmental math courses, Elementary Algebra and Intermediate Algebra, with two college-level courses, Fundamentals of Math and Elements of Statistics using a newly created Linked Workshop Model. The results of this first pilot were excellent. Seventy percent of the nearly 500 students who would have otherwise been assigned to a developmental course were successful in completing Fundamentals of Math linked to a supplemental workshop compared with 44% of those students who previously took the developmental course and the Fundamentals of Math course sequentially. Similarly in Elements of Statistics, 52% of the 442 students enrolled in the linked college-level course completed the course successfully compared with 29% who previously took the developmental course and Statistics sequentially. The APSU team is quite encouraged by these results and is working on improving training for the student leaders based on the first pilot. To learn more, contact Martin Golson at golsonm@apsu.edu.

The team redesigning developmental math at **Chattanooga State Technical Community College** (CSTCC) experienced a number of problems in carrying out its plan during its spring 2008 pilot; consequently, student success rates did not improve. The team will revise its redesign plan for the fall 2008 pilot. To learn more, contact Saundra King at sking@chattanoogastate.edu.

During spring 2008, **Cleveland State Community College** (CSCC) piloted the redesigns of Elementary Algebra and Intermediate Algebra. This pilot included modularizing the content and providing individualized study plans for the 178 students enrolled in Elementary Algebra and the 233 students enrolled in Intermediate Algebra. The results of the first pilot were excellent. In Elementary Algebra, the average percent correct on common content items in course exams for the redesigned course was 86% versus 70% for traditional students in fall 2007. Similarly, in Intermediate Algebra, the mean was 90% in the redesigned format versus 77% in the traditional format. In Elementary Algebra, the course GPA for the redesigned format was 2.88 compared with 1.90 in the traditional format. Similarly in Intermediate Algebra, the redesigned sections had a course GPA of 2.85, whereas the traditional course GPA was 2.05. Overall, the team is quite pleased with these results and looks forward to the redesign of four additional courses: Basic Math, College Algebra, Statistics and Finite Math. To learn more, contact John Squires at jsquires@clevelandstatecc.edu.

Columbia State Community College (CSCC) has completed the first pilot of its developmental reading/writing redesign. During this phase, two six-hour courses in each subject were combined into two three-hour courses. A software component was introduced into each course. Although student success during this first pilot did not improve, faculty learned a lot about what is necessary to ensure success and plans to make the following changes. 1) More intensive training for faculty. Faculty who received the most extensive training on the software and who provided students the best training experienced the best student success rates.

Additional training for all full- and part-time faculty teaching the course will occur during a faculty in-service week just prior to the beginning of the fall 2008 term. 2) More detailed student orientation to the redesigned modules. Students need a detailed, hands-on orientation to each module so that they can start their online work as soon as classes begin. Hands-on orientations in a computer lab are scheduled for the first class meeting of each section of the reading and writing modules to offer all students an equal opportunity to achieve success. CSCC has decided to move to full implementation of its modularized reading and writing courses during fall 2008 so that students at all five campuses will have the opportunity to benefit from the redesign. Institution-wide advisor training has been made available to prepare all academic advisors who advise students with reading/writing requirements. To learn more, contact Victoria Gay at vgay@columbiastate.edu.

The redesign of developmental math at **Jackson State Community College** (JSCC) combines three developmental studies courses into one, modularizing the content into 12 segments. Students can enter the sequence where needed and study only those concepts they need to master. After completion of a new showcase lab, the spring 2008 pilot showed that the redesign is off to a promising start. Students earning a grade of C or better increased from 41% in the traditional course to 54% in the redesign format. Students were able to accelerate their completion with 10 students completing the equivalent of two courses in one term and 25 students completing part of their second course in one term. The mean post-test scores by module in the redesign were equal to or in most cases better than those in the traditional course. Except for one module (factoring), all mean gains from the pre-test to the post-test were higher in the redesigned course, frequently by 10 points or more. These gains were statistically significant. Students also indicated reduced math anxiety, which was another of the team's goals. Overall, the team is excited about the results of the first pilot. Plans for the fall 2008 include improving the placement process and requiring student engagement in focus groups. To learn more, contact Mary Jane Bassett at mbassett@jscc.edu or Betty Frost at bfrost@jscc.edu.

Northeast State Technical Community College conducted the first pilot of their Basic and Developmental Reading redesign in spring 2008. The success rates in the redesign were similar to those in the traditional format. Based on their pilot experience, the team plans to make a number of changes in the second pilot in fall 2008. The team concluded that too many different activities were offered to students; they plan to restructure the course so that *MyReadingLab* is the primary focus of student activities. They will further modify the course so that online study skills and learning strategies will be taught early in the semester. The team plans to add a mandatory group meeting each week that will be used to communicate with students on matters of concern common to the group, teach major reading concepts as appropriate, provide intervention as needed and create a sense of "connectedness" among the students. Finally, they plan to record information about the major reading concepts using Tegrity and make it available to students through D2L. To learn more, contact Xiaoping Wang at XPWANG@northeaststate.edu.

To learn more about the TBR initiative, see http://www.thencat.org/States/TBR.htm or contact Treva Berryman at Treva.Berryman@tbr.edu.

3. COLLEAGUES COMMITTED TO REDESIGN (C^2R)

Featuring progress reports and outcomes achieved by the C2R program.

C2R Institutions Submit Final Course Redesign Plans

On June 1, 2008, eight of the 20 institutions accepted in Round II of the Colleagues Committed to Redesign (C2R) program completed NCAT's extensive planning process and submitted final course redesign plans. The six-month planning process involved submitting responses to the Course Readiness Criteria, gathering and analyzing baseline data on learning outcomes and instructional costs at their campuses, attending the Disciplinary Institutes, consulting with Redesign Scholars and NCAT staff, and working as a campus team to formulate a well-articulated plan. The teams will conduct pilots of their redesign in fall 2008. Full abstracts of each project are available on the NCAT web site at http://www.thencat.org/RedesignAlliance/C2R/Rd2ProjDesc.htm. Brief descriptions of the redesign plans with contact information are presented below.

Arizona State University (ASU) plans to redesign Emergent Literacy, a required course for state certification in early childhood education. The course serves ~100 students annually. In its traditional format, the course is offered once a year at each of ASU's three campuses and is taught by full-time faculty. The purpose of the redesign is to increase access to this required course, currently limited by section size (~30) and the inability of students living in rural areas to enroll. The redesigned course will support a projected enrollment growth of 300 to 500 students a year and will be offered fully online in one large section for students from all of the ASU campuses. Students will be placed in small learning teams of ten to twelve students to engage in collaborative learning activities directed by graduate teaching assistants (GTAs) and adjunct faculty. Students will benefit from a tiered student assistance model that will provide ongoing assessment and immediate feedback on their work. By reducing the number of sections from three to one, increasing section size from 30 to 100 students and reducing the number of full-time faculty from three to one, ASU expects to reduce the cost-per-student from $556 to $145, a 74% savings. To learn more, contact Nancy Perry at Nancy.Perry@asu.edu.

Auburn University (AU) plans to redesign Engineering Physics, a core course currently enrolling ~750 students annually. The traditional course consists of a combination of lectures, labs and recitation sessions. The purpose of the redesign is to reduce the failure rate and enhance the students' learning environment. The redesigned course, using the Replacement Model, will expose students to course material through online activities and assessments completed prior to class. Faculty will monitor their progress. Class time will be used to summarize content and deal with misconceptions, subtleties, connections and applications. The redesign will

replace the lab and recitation sessions with physics activities sessions where students will work collaboratively in small groups to solve real physics problems. Auburn's cost reduction strategy is to decrease the number of graduate teaching assistants (GTAs) involved in the course from eight to five in the fall and six to four in the spring by having each GTA carry three physics activity sessions rather than two labs and recitations. This change is made possible because of the coordinated development and automation of much of the course material. The cost-per-student will decline from $390 in the traditional course to $219 in the redesigned course, a savings of 44%.To learn more, contact Marllin Simon at msimon@physics.auburn.edu.

Auburn University (AU) also plans to redesign Pre-Calculus Algebra, enrolling ~1000 students annually. The course has traditionally been taught in two formats, large auditorium classes taught by faculty and small classes typically taught by graduate teaching assistants (GTAs) or adjunct faculty. Auburn wants to improve the success rate for the 30% to 35% of students who do not succeed in the traditional course. The redesigned course, using the Emporium Model, will require students to spend a minimum of three hours per week working with *MyMathLab* software in a lab staffed by GTAs and undergraduate teaching assistants, who will provide on-demand, individualized assistance. Students may go to the lab whenever they wish, but they must meet scheduled deadlines for homework, quizzes and tests. Staffed computer labs will be available for a total of 42 hours per week at times determined to be popular by the students. The redesigned course will reduce instructional costs by decreasing the number of sections from 23 to 2, reducing full-time faculty from three to two, eliminating five part-time faculty and reducing GTAs from 21 to 14. These actions will reduce the cost-per-student from $128 to $75, a 41% savings. To learn more, contact Michel Smith at smith01@auburn.edu.

New York Institute of Technology (NYIT) plans to redesign Introduction to Psychology, which enrolls ~835 students annually. The course has traditionally been taught in a lecture format by both full-time and adjunct faculty on the Manhattan and Old Westbury campuses. The redesign will address the lack of consistency across sections to ensure that course outcomes, objectives, and requirements are the same for all students. NYIT will redesign the course, using the Supplemental Model, by adding online interactive labs and assignments that students will complete, either individually or in groups, prior to class. Students will also complete online tutorials and quizzes to be submitted for review by peer mentors when appropriate. Peer mentors will also lead review sessions, assist with small groups during class, help grade assignments and proctor exams. Cost savings will be generated by reducing the number of sections from 17 to 10. Section size at Old Westbury will increase from ~80 to ~110 and at the Manhattan campus from between 20 and 49 to ~60 students. The number of adjuncts will be reduced from five to two. To learn more, contact Spencer Turkel at sturkel@nyit.edu.

Oklahoma State University (OSU) plans to redesign College Algebra, which enrolls ~2000 students annually and has traditionally been taught in a lecture format by faculty and graduate teaching assistants (GTAs). OSU wants to improve success rates to 65-70% and provide a more consistent learning experience for all students. In 2007-2008, section size was reduced from 100 to 50 students, but this model is not financially sustainable. The redesigned course, using the Emporium Model, will require students to spend three hours per week working with *MyMathLab* in a lab staffed by instructors and undergraduate tutors, who will provide on-demand, individualized assistance. All homework will be completed online, and quizzes may be taken multiple times. Small focus groups of 35 students each will meet once a week for 50 minutes. The focus group instructor will monitor student progress and intervene when students need assistance. Projected cost savings will be achieved by decreasing the total number of instructors from 20 to 15. The mix of instructors will be changed by reducing the number of lecturers from 13, each teaching two sections, to five, each teaching four sections, and slightly increasing the number of GTAs from seven to nine. The cost-per-student will decrease from $102 to $74, a 27% reduction. To learn more, contact Cynthia Francisco at Cynthia@math.okstate.edu.

Southeastern Louisiana University (SELU) plans to redesign Intermediate Algebra, a developmental course enrolling ~1350 students annually. Enrollment is projected to eventually increase by ~400 students annually after the minimum score for college-level math placement increases in 2009. With a low success rate of ~31%, this math course presents a significant barrier to student progress. SELU wants to improve the success rate, enabling more students to continue their college education. The redesigned course will use the Replacement Model. Rather than meeting three times per week, students will meet twice a week; the third session will be replaced by a requirement to spend three hours in a math learning lab. Students will complete homework, quizzes and tests using *MyMathLab* and receive one-on-one help from instructors and peer tutors in the lab. The redesign plan projects cost savings by increasing section size from 25 to 40 and decreasing the number of sections from 54 to 34. The number of faculty will decrease from 22 to 14, and 26 peer tutors will be added. The cost-per-student will decrease from $225 to $95, a 58% reduction. To learn more, contact Becky Muller at bmuller@selu.edu.

The **University of Central Florida** plans to redesign College Algebra, enrolling ~4100 students annually. The course is currently taught in three modes: large lecture sections, independent sections, and mixed mode (lecture and online) sections. The purpose of the redesign is to: 1) address the withdrawal rate in the mixed mode sections which is more than double the large lecture and independent sections; and 2) provide quality learning outcomes for a large, diverse student population with decreasing available funds and instructional personnel. The redesigned course, using the Emporium Model, will require students to spend a minimum of three hours each week in a computer lab working with *MyMathLab* software. The lab will be staffed with graduate teaching assistants (GTAs), undergraduate teaching assistants (UTAs) and peer tutors, who will provide on-demand, individualized assistance. One face-to-face meeting each week conducted by the course coordinator will focus on areas of difficulty encountered by the students during the previous week, highlight the concepts to be introduced in the upcoming week, and address any technical difficulties that students may be having. Cost savings will be generated by reducing the annual number of sections from 65 to 13, increasing section size and changing the mix of personnel teaching the course. The cost-per-student will be decreased from $77 to $44, a 37% reduction. To learn more, contact Tammy Muhs at tmuhs@mail.ucf.edu.

The **University of West Alabama** (UWA) plans to redesign Written English, enrolling ~475 students annually. The course is taught as a modes-based writing course in a traditional classroom setting. The purpose of the redesign is to address remedial problems more efficiently and effectively and reduce the 37% failure rate. The redesigned course, using the Replacement Model, will break each section of 30 students into three smaller ten-student groups or quality circles. Each group will meet with the faculty member once a week and spend the other two sessions in a supervised computer lab for two hours to work on a variety of participatory, technology-centered activities such as grammar and mechanics exercises, research, drafting and peer reviewing. An adjunct or lab assistant will supervise the lab sessions, assisting the students as needed. Cost savings will be achieved primarily by changing the personnel mix, moving from five full-time professors and five lecturers to seven lecturers and two professors. The number of sections will be reduced from 19 to 16 and section size will be increased from 25 to 30. The cost-per-student will decrease from $248 to $209, a 16% reduction. To learn more, contact Tim Edwards at tedwards@uwa.edu.

The third and final round of C2R will begin in January, 2009. To learn more about how to apply, see http://www.thencat.org/RedesignAlliance/DissemProgram.htm or contact Kay Katzer, C2R Program Coordinator, at kkatzer@theNCAT.org.

4. THE REDESIGN ALLIANCE

Featuring updates from the Alliance, a member organization of institutions, organizations and companies committed to and experienced with large-scale course redesign.

Hold the Date! The 2009 Redesign Alliance Conference To Be Held March 22-24

The Third Annual Redesign Alliance Conference will be held on March 22 - 24, 2009, at the Rosen Centre Hotel in Orlando, FL. After receiving so much positive feedback about the program and the hotel at the 2008 conference, NCAT has decided to return to the same location. The 2009 program will feature outcomes from the full implementation of redesign projects that were only in their pilot phases during the 2008 conference plus reports of new redesign plans that are underway at institutions that are part of the State University of New York, the Mississippi Institutions of Higher Learning and Round II of NCAT's Colleagues Committed to Redesign (C^2R) program. Corporate members of the Alliance will be well represented with information about their products and services that can make your redesign more effective. There will be many opportunities to exchange ideas and learn from one another. We are anticipating another exciting event. More information will be forthcoming in the fall, but please mark your calendars. We hope to see you there!

The Redesign Alliance Welcomes New Members

The Redesign Alliance would like to welcome six new members: **City University of New York (CUNY)**, **Lee College**, **Mississippi Institutions of Higher Learning**, **W.H. Freeman**, **WebAssign** and **Worth Publishers**. We are pleased that each has chosen to join others who are interested in learning more about effective course redesign. The mission of the Redesign Alliance is to advance the concept of course redesign throughout higher education to increase student success and access while containing or reducing instructional costs. The Redesign Alliance pursues this mission by creating a community of higher education institutions and others who are committed to and experienced with large-scale course redesign. To learn more about joining the Redesign Alliance, see http://www.thencat.org/RA.htm or contact Kay Katzer, Redesign Membership Coordinator, at kkatzer@theNCAT.org.

5. CORPORATE CONNECTIONS

Linking content and software providers with leading edge institutions.

Blackboard Update

On June 2, 2008, Carol Twigg met with Blackboard's executive management team in Washington, D.C. The executives benefited from an overview of course redesign as well as an opportunity to ask questions and clarify their understanding of NCAT programs and opportunities for collaboration. As a well-organized and well-developed course management system, Blackboard is a key component of many course redesigns, providing the structure in which course content resides and where students and faculty engage in multiple learning activities.

Shortly after the executive briefing, Blackboard's tenth user conference, BbWorld 08, brought together over 2,000 Blackboard users from around the globe in Las Vegas, NV, on July 13 – 18, 2008. With a renewed focus on client solutions, BbWorld 08 offered sessions around four key themes: engage, assess, manage, and K-12. The continuing emphasis at Blackboard on student engagement was reflected in over 20 sessions devoted to the topic. Many of those sessions highlighted the principles that underlie NCAT's course redesign methodology. For example, Patrician Dinneen of The George Washington University presented a rich case study on how to use the Blackboard learning system to increase small-group, online discussions in a large lecture course. For further information on BbWorld 08, visit http://www.blackboard.com/company/events/BbWorld08.

New Addition to Pearson Website Supports Course Redesign

In order to extend the opportunities for those working on course redesigns using Pearson products to share experiences, knowledge and successes, Pearson has recently added an online community to its course

redesign website. Visit the new site at http://www.pearsoncourseredesign.com.

At the new website, you can also find detailed information about the next Pearson Course Redesign Workshop, which will be held in Tucson, AZ, at the Westin La Paloma Resort and Spa on October 17 – 18, 2008. Peer consultation and strong communication between users and developers are key elements of each Pearson Course Redesign Workshop, along with in-depth product information on a range of Pearson products that support course redesign, including the MyLab series and the Mastering series. Those experiences, along with readily available data on improved student learning, have combined to impact institutional direction. As one attendee at a Pearson workshop on course redesign expressed it, “Our instructors need both the resources for better instruction and peer consultation regarding best practices for adoption and implementation.” An administrator who attended last fall’s Pearson workshop concluded, “I think course redesign is the way to go. . . . What I learned this past week tells me that we can use our faculty expertise differently. . . .”

Two NCAT Corporate Associates Merge: Cengage Learning Welcomes Houghton Mifflin College Division

Cengage Learning is proud to announce the acquisition of Houghton Mifflin College Division, which will be integrated into Cengage Learning’s Academic and Professional Group. The union of Cengage Learning and the College Division of Houghton Mifflin merges respected educational authors and titles and reinforces Cengage Learning’s position as a leading and trusted source for innovative print, digital and personalized educational solutions. Through this acquisition, Cengage Learning will add two programs ideally positioned to support course redesign efforts: Eduspace and Nexos Media Edition introductory Spanish interactive eBook will be added from the Houghton Mifflin College Division to Cengage Learning’s successful portfolio of results-oriented products including Custom Courseware, Enhanced WebAssign for Math and Physics, CengageNOW and OWL (Online Web-based Learning) for Chemistry.

This new union also strengthens Cengage Learning’s capacity to partner on course redesign opportunities through the inclusion of Houghton Mifflin College Division’s people and services—and most notably, the TeamUP Faculty Programs Group which provides educator-to-educator assistance for creating and implementing successful course redesign programs. The TeamUP Faculty Programs Group has a full-time staff comprised of experienced college educators who offer consulting on subject matter areas, retention and assessment, integration of technology, course design, online course development, and student success issues. This staff can also assist with training and professional development programs. In addition, the TeamUP Faculty Programs Group manages a Faculty Advisors team consisting of full-time college and university educators. These discipline specialists deliver presentations and consultation on best practices developed in their own classrooms, and assist colleges and universities with redesign efforts. They lead sessions on campuses through implementation workshops, through regional and national conferences and through distance workshops. They also offer phone consulting. To learn more, contact Julie Conover at julie.conover@cengage.com

6. COMMON GROUND

Reporting on initiatives that share the Center's goals and objectives.

SMARTHINKING Launches StraighterLine

StraigherLine is a new, online option for earning college credit for general education courses. A division of SMARTHINKING, the experienced and highly successful online tutoring service, StraighterLine combines online, individualized tutoring services with commercially available products-–such as electronic content and textbooks from publishers, course management systems, and assessment tests-–to create a set of general education courses. Students purchase these courses directly from StraighterLine and may earn credit by transfer to one of StraighterLine’s partner academic institutions or to a college of the student’s choice. Students may stop or start at any time. Currently four courses are enrolling students, and new offerings in math, English, science and economics will be available soon. For more information about this new higher education option, see www.straighterline.com or contact Burck Smith at bsmith@SMARTHINKING.com.

University of Mississippi holds Math Redesign Workshop

On April 28, 2008, the **University of Mississippi** hosted a workshop for those interested in redesigning mathematics courses. Old Miss representatives discussed why they decided to redesign their courses, how they run their math lab, how they teach the redesigned courses and what changes in student learning outcomes have been achieved. As part of their redesign, Ole Miss extensively researched available mathematics courseware products and selected two of them to try. They conducted a controlled study, comparing final exam grades of students who used Hawkes Learning System, another software product and a textbook alone. Students who used Hawkes Learning System performed significantly better than those using the other software product or the textbook alone. Those attending the workshop had the opportunity to meet with NCAT Redesign Scholar and math department chair Tristan Denley, talk with faculty involved in the program, get advice about specific implementation issues and tour their state-of-the-art math lab. Representatives from Hawkes Learning Systems, which is being used as part of the math redesign at Ole Miss, also demonstrated their software and answered questions about how it can be implemented in other course redesigns. Ole Miss will host another mathematics redesign workshop in fall 2008. To learn more, contact Tristan Denley at tdenley@olemiss.edu or Brittany Walker at bwalker@hawkeslearning.com.

Austin Peay State University Pilots Structured Learning Assistance Approach in English Composition

People often ask us whether the redesign efforts in one academic department transfer to other departments. The English department at Austin Peay State University (APSU) is learning from the APSU math redesign, which is part of the Tennessee Board of Regents Redesign Initiative (see http://www.thencat.org/States/TN/Abstracts/APSU%20Algebra_Abstract.htm.) APSU English faculty have begun to offer some sections of English Composition coupled with Structured Learning Assistance (SLA) workshops based on the model developed initially at Ferris State University in Michigan. Students who would have previously taken a separate developmental writing course prior to enrolling in college-level English are now able to cover the developmental content in the SLA workshops while enrolled in the college-level course. Designated as enhanced sections, the three-hour English Composition courses are supported by two additional one-hour workshops weekly conducted by SLA leaders.

The English redesign team has modified the approach used in the APSU math courses. The English redesign uses graduate students as SLA leaders, providing them with supervised opportunities to lead the workshops and learn more about teaching English composition. Assignments and technology use are not consistent in all enhanced English sections, but the workshops do have some assignments in common. Preliminary results from fall 2007 showed that 135 students who participated in the nine enhanced sections passed the course at a slightly higher rate than students who previously took the two courses sequentially. The English redesign team has made good progress and continues to consult with the math redesign team as the latter fully implements the more consistent Linked Workshop Model. To learn more, contact David Guest at guestd@apsu.edu or Cynthia McWilliams at mcwilliamsc@apsu.edu.

7. SUBSCRIPTIONS, SUBMISSIONS, ARCHIVES, REPOSTING

The National Center for Academic Transformation serves as a source of expertise and support for those in higher education who wish to take advantage of the capabilities of information technology to transform their academic practices.

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